





Digitized by the Internet Archive
in 2026

UNIVERSITY OF HAWAII
LIBRARY

12
LIBRARY USE ONLY

BIOCHEMICAL AND BIOPHYSICAL

Research Communications

EDITORS:

Paul D. Boyer

Jacques Monod

I. C. Gunsalus

Frederick C. Neidhardt

B. L. Horecker

W. D. Phillips

Boris Magasanik

Esmond E. Snell

Volume 38 • 1970



ACADEMIC PRESS

New York and London

COPYRIGHT© 1970, ACADEMIC PRESS, INC.
ALL RIGHTS RESERVED.

No part of this book may be reproduced in any form,
by photostat, microfilm, by retrieval system, or any
other means, without written permission from the
Publishers.

Made in the United States of America

Contents of Volume 38

Number 1, January 6, 1970

AKASHI MURAMATSU AND STANLEY G. NATHENSON. Isolation of a Chromatographically Unique Glycopeptide from Murine <i>Histocompatibility-2</i> (H-2) Membrane Alloantigens Labelled with H ³ -Fucose or H ³ -Glucosamine	1
ASUTOSHI MUTO AND DAVID M. GIBSON. Selective Dampening of Lipogenic Enzymes of Liver by Exogenous Polyunsaturated Fatty Acids	9
ERNESTO SCOFFONE, GUIDO GALIAZZO AND GIULIO JORI. Dye-Sensitized Photo-Oxidation as a Tool for Mapping Some Amino Acid Residues in Proteins	16
K. GUPTA, RAM NARAYAN, AND K. G. GOLLAKOTA. Differentiation between Heat Resistance and Octyl Alcohol Resistance of the Cells of <i>Bacillus cereus</i> T	23
B. KITTO, F. E. STOLZENBACH, AND N. O. KAPLAN. Mitochondrial Malate Dehydrogenase: Further Studies on Multiple Electrophoretic Forms	31
HENRY CHESSIN AND WILLIAM C. SUMMERS. Initiation by RNA Polymerase on UV or X-Ray Damaged T7 DNA	40
GALIVAN AND F. M. HUENNEKENS. Resolution of the Methionine Synthetase System From <i>Escherichia coli</i> K-12	46
S. JOSHI, A. YARON AND H. R. LINDNER. An Endopeptidase in the Uterine Secretion of the Proestrous Rat and Its Relation to a Sperm Decapitating Factor	52
SEPH B. WARSHAW AND ROBERT E. KIMURA. Carnitine Esters of Fatty Acids Support Mitochondrial Fatty Acid Synthesis	58
ONALD S. BERNIS. Protein Aggregation in Phycocyanin — Osmotic Pressure Studies	65
ILIN S. KROPP AND JOHN E. WILSON. Hexokinase Binding Sites on Mitochondrial Membranes	74
TERAO AND K. OGATA. Preparation and Some Properties of Active Subunits From Rat Liver Ribosomes	80
ERARD S. LEVEY. Solubilization of Myocardial Adenyl Cyclase	86
ONALD BEREZNEY, LINDA K. FUNK, AND F. L. CRANE. Nuclear Electron Transport. I. Electron Transport Enzymes in Bovine Liver Nuclei and Nuclear Membrane	93
D. CUNNINGHAM AND W. F. BRIDGERS. Brain and Liver Mitochondrial Protein Synthesis: Potassium Dependent Chloramphenicol Inhibition	99
ORAM SALOMON AND MICHAEL SCHRAMM. A Specific Binding Site for 3',5' Cyclic AMP in Rat Parotid Microsomes	106
JOHN LASZLO, DONALD S. MILLER, OLIVER BROWN, AND EARL BARIL. Rat Hepatoma DNA Polymerase: Partial Analysis of the <i>In vitro</i> DNA Product	112
OBUMARO KAWASHIMA. Non-Synchronous Incorporation of C ¹⁴ O ₂ into Amino Acids of the Two Subunits of Fraction I Protein	119
MAROL WARNER, VERNE SCHUMAKER AND FRED KARUSH. The Detection of a Conformational Change in the Antibody Molecule Upon Interaction with Hapten	125
AKASHI TAKAGI AND SADAOKI IWANAGA. Polypeptide Chain Involved in the Cross-Linking of Stabilized Bovine Fibrin	129
TUNILLA GILLBERG — LA FORCE AND STURE FORSÉN. The Binding of Anionic Surfactants to Human Serum Albumin Studied by Means of ⁸¹ Br Nuclear Magnetic Resonance	137
K. HOLMES AND HILLEL S. LEVINSON. Thermal Stimulation of <i>Bacillus megaterium</i> Glucose-6-Phosphate Dehydrogenase	143
EYL AND T. INAGAMI. Modification of Carboxyl Groups in the Active Site of Trypsin	149
L. A. Q. SIDDIQUI, MANUEL KRAUSKOPF, AND JAMES OFENGAND. The Function of Pseudouridylic Acid in Transfer RNA. III. Inactivation of Formylmethionine Transfer RNA or <i>E. coli</i> by Cyanoethylation with Acrylonitrile	156
KEDINGER, M. GNIAZDOWSKI, J. L. MANDEL JR., F. GISSINGER, AND P. CHAMBON. α -Amanitin: A Specific Inhibitor of One of Two DNA-Dependent RNA Polymerase Activities from Calf Thymus	165
MICHAEL H. KLAPPER. Rapid Binding of PMB to Non-SH Groups in Hemerythrin	172
RRATA	180

Number 2, January 23, 1970

K. HILL AND T. H. CHAN. The Absolute Configuration of Pantothenic Acid	181
ERIK G. YOUNG, JOAN D. HOLROYD, AND PETER F. HALL. Enzymatic and Spectral Properties of Solubilized Cytochrome P-450 from Bovine Adrenocortical Mitochondria	184

T. MORITA AND I. MIFUCHI. Characterization of Respiration-Deficient Mutant of <i>Saccharomyces cerevisiae</i> Lacking Cytochromes a and c	19
MORTON M. WEBER, JOHN T. MATSCHINER, AND HARRY D. PECK. Menaquinone-6 in the Strict Anaerobes <i>Desulfovibrio vulgaris</i> and <i>Desulfovibrio gigas</i>	19
RANDALL WOOD AND KATHLEEN HEALY. Tumor Lipids: Biosynthesis of Plasmalogens	20
CORRADO BAGLIONI. The Role of Pyrrolidone Carboxylic Acid in the Initiation of Immunoglobulin Peptide Chains	21
A. R. INAMDAR, C. K. RAMAKRISHNA KURUP, AND T. RAMASARMA. Enzymes in Tryptophan Metabolism Under Hypobaric Conditions	21
H. R. LEFFLER, T. J. O'BRIEN, D. V. GLOVER, AND J. H. CHERRY. Growth and RNA Synthesis in Maize Seedlings Treated with Ethyl Methanesulfonate	21
L. RIMAI, M. E. HEYDE, AND E. B. CAREW. Effect of Divalent Metal Ion Binding on the Raman Spectrum of ATP in Aqueous Solution	22
S. MATSUMURA. Conformation of Acyl Carrier Protein from <i>Mycobacterium phlei</i>	22
A. EISENSTARK AND DONNA RUFF. Repair in Phage and Bacteria Inactivated by Light from Fluorescent and Photo Lamps	24
F. J. RUZICKA AND F. L. CRANE. Four Quinone Reduction Sites in the NADH Dehydrogenase Complex	24
MARY LOUISE SHONKA BARTLETT AND DONALD J. GRAVES. Ultraviolet Spectral Differences Between Phosphorylase a and b	25
GARY J. NELSON. Studies on the Lipids of Sheep Red Blood Cells. IV. The Identification of a New Phospholipid, N-Acyl Phosphatidyl Serine	26
YOSHINORI TAKEDA. Complementation Experiments about the Q Gene of Phage λ	26
MYRA BERMAN, NOE ZWAIG, AND E. C. C. LIN. Suppression of a Pleiotropic Mutant Affecting Glycerol Dissimilation	27
BRIGITTE M. JOCKUSCH, DONNA F. BROWN, AND HAROLD P. RUSCH. Synthesis of a Nuclear Protein in G ₂ -Phase	27
B. H. FRANK AND A. J. VEROS. Interaction of Zinc with Proinsulin	28
LAWRENCE R. GURLEY, JULIA M. HARDIN, AND RONALD A. WALTERS. The Response of Histone Fractions to X Irradiation in Cultured Chinese Hamster Cells	29
G. A. TANNOCK, A. J. GIBBS, AND P. D. COOPER. A Re-Examination of the Molecular Weight of Poliovirus RNA	29
H. HARA, T. HORIUCHI, M. SANAYOSHI, AND S. NISHIMURA. 4-Thiouridine-Specific Spin-Labeling of <i>E. coli</i> Transfer RNA	30
G. W. SCHAEFFER AND F. T. SHARPE, JR. Cytidine Methylation in Buds Released from Dormancy with 6-Benzylaminopurine	31
BRUNO PAPIRMEISTER AND JACK S. WOLPERT. Lysergic Acid Diethylamide: Photodynamic Inactivation of Repair Deficient <i>E. coli</i> and T1 Bacteriophage	31
HIROSHI TERAOKA, MIKIO TAMAKI, AND KENTARO TANAKA. Peptidyl Transferase Activity of <i>Escherichia coli</i> Ribosomes Having an Altered Protein Component in the 50S Subunit	32
W. K. PAIK AND H. W. LEE. Enzymatic Hydrolysis of Histones in Rat Kidney Microsomes	33
ERNEST BEUTLER, SATISH K. SRIVASTAVA, AND CAROL WEST. The Reversibility of N-Ethylmaleimide (NEM) Alkylation of Red Cell Glutathione	34
SUZANNE BOURGEOIS AND ARTHUR D. RIGGS. The Lac Repressor-Operator Interaction. IV. Assay and Purification of Operator DNA	34
T. JONES, M. GROOM, AND K. GRIFFITHS. Steroid Biosynthesis by Cultures of Normal Human Adrenal Tissue	35
ERRATUM	36

Number 3, February 6, 1970

R. E. A. GADD AND J. FRANK HENDERSON. The Rate-Limiting Step in the Adenine Phosphoribosyltransferase Reaction	36
S. MATSUMURA, D. N. BRINDLEY, AND KONRAD BLOCH. Acyl Carrier Protein from <i>Mycobacterium phlei</i>	36
MOON H. HAN AND E. S. BENSON. Conformational Changes in Troponin Induced by Ca ⁺⁺	37
MASAO SHIMIZU, TADEO SUZUKI, YASUHIRO HOSOKAWA, OSAMU NAGASE, AND YASUSHI ABIKO. Effect of Adenine Nucleotide Moiety of Coenzyme A on Phosphotransacetylase	38
MARK J. ROWE AND M. A. SMITH. Synthesis of 3'-5' Dinucleotides with RNase T ₁	39

WILLIAM A. CATTERALL AND PETER L. PEDERSEN. Effects of Phosphotungstic Acid and Silicotungstic Acid on Respiration and Integrity of Rat Liver Mitochondria	400
F. ROHRMANN AND R. G. KRUEGER. The Self-Assembly of RNA Free Protein Subunits from Bacteriophage MS-2	406
K. NEAL, II, H.-P. HOFFMANN, C. J. AVERS, AND C. A. PRICE. Derepression of Mitochondria in Yeast Spheroplasts	414
YASUO SHIMADA AND AUBREY GORBMAN. Long Lasting Changes in RNA Synthesis in the Forebrains of Female Rats Treated with Testosterone Soon After Birth	423
PONGS. Fluorescence Studies on Ribonuclease T ₁	431
PALACIOS, C. HUITRÓN, AND G. SOBERÓN. Preferential Hydrolysis of Endogenous Arginine by Rat Liver Arginase	438
SUN CHANG, ARDIS SAVORY, AND A. J. GLAZKO. A New Metabolite of 5,5-Diphenylhydantoin (Dilantin ⁺)	444
ROBERT POLANSKY AND THOMAS PETER BENNETT. Differences in the Soluble Lens Proteins from Tadpole and Adult Bullfrogs	450
FRIDKIN, M. WILCHEK, AND M. SHEINBLATT. NMR Studies of H-D Exchange of α -CH Group of Amino Acid Residues in Peptides	458
A. LEV AND LIDIJA N. PISAREVA. Direct Evidence of Sodium Release in the Course of Na ⁺ ,K ⁺ -Dependent ATPase Reaction	465
ABRIEL M. LEVIS. 2-Hydroxy Fatty Acid Oxidases of Rat Kidney	470
STAN BOGIN, TANEAKI HIGASHI, AND ARNOLD F. BRODIE. Interchangeability of Coupling Factors from Bacterial and Mammalian Origin	478
J. VARGHESE. 5-Thymine-5,6-Dihydrothymine from DNA Irradiated with Ultraviolet Light.	484
ANTHONY D. MORRISON, ALBERT I. WINEGRAD, C. JOAN FINK, AND PAUL E. LACY. Sorbitol Synthesis in Isolated Rat Pancreatic Islets	491
T. RAO, M. SUNDARALINGAM, S. K. ARORA, AND S. R. HALL. Effects of 3'-O-Aminoacylation and 2'-O-Methylation on the Conformation of Ribonucleosides. The Crystal Structure of 3'-O-Acetyl-adenosine	496
KRISHNA RAO AND HIROSHI MATSUBARA. The Amino Acid Sequence of Taro Ferredoxin	500
RAMACHANDRAN AND VIRGINIA LEE. Preparation and Properties of the <i>o</i> -Nitrophenyl Sulfonyl Derivative of ACTH: An Inhibitor of the Lipolytic Action of the Hormone	507
YASAO HYODO, HIDEKI KOYAMA, AND TETSUO ONO. Intermediate Fragments of the Newly Replicated DNA in Mammalian Cells	513
INDIA COLES AND G. M. GRAY. The Biosynthesis of Digalactosylceramide in the Kidney of the C57/BL Mouse	520
B. HAY AND G. M. GRAY. Glycosphingolipid Biosynthesis in Kidneys of Normal C3H/He Mice and of Those with BP8 Ascites Tumours	527
YAI YIU CHEUNG. Cyclic 3',5'-Nucleotide Phosphodiesterase	533

Number 4, February 20, 1970

ROBERT M. BELL AND D. E. KOSHLAND, JR. A Phosphoribosyl-Enzyme Covalent Intermediate in the First Enzyme of Histidine Biosynthesis	539
LEMON YIELDING. Modification by Sucrose of the Catalytic Activity and Physical Properties of Glutamic Dehydrogenase	546
DAVID WILSON AND JOSEPH F. FOSTER. Alterations in Proteins and Polyamino Acids Caused by Ultraviolet Irradiation in a Spectropolarimeter	552
LAPIDOT, D. ELAT, S. RAPPOPORT, AND N. DE GROOT. Peptidyl-tRNA. IX. The Use of <i>o</i> -Nitrophenylsulfonyl Group as N-Protecting Group in the Synthesis of Peptidyl-tRNA	559
C. BROWN AND F. E. YOUNG. Dynamic Interactions Between Cell Wall Polymers, Extracellular Proteases and Autolytic Enzymes	564
DOSKOCIL AND F. SORM. The Effects of 5-Azacytidine and 5-Azaauridine on Protein Synthesis in <i>Escherichia coli</i>	569
GIL JELLUM AND KJELL ELGJO. S-Alkylglutathione, Methylglyoxal Metabolism and Cell Division ...	575
SPECTOR AND D. G. JOHNS. 4-Hydroxypyrazolo(3,4-d)Pyrimidine as a Substrate for Xanthine Oxidase: Loss of Conventional Substrate Activity with Catalytic Cycling of the Enzyme	583
J. HALL. Mode of Action of Monamycin. Evidence for the Formation of a Complex Between the Monamycin Cyclodepsipeptide Antibiotics and Some Cations in Solution	590

ETIENNE-EMILE BAULIEU AND INGRID JUNG. A Prostatic Cytosol Receptor	59
MIREILLE BRUSCHI, JEAN LE GALL, AND KARL DUS. C-Type Cytochromes of <i>Desulfovibrio vulgaris</i> Amino Acid Composition and End Groups of Cytochrome C _{553X}	60
GOLDER WILSON, STEVEN P. ROSE, AND C. FRED FOX. The Effect of Membrane Lipid Unsaturation on Glycoside Transport	61
J. M. INGRAM. The Combining Sites of Yeast Fructose Diphosphate Aldolase	62
PAUL D. SCHEDL, ROBERT E. SINGER, AND THOMAS W. CONWAY. A Factor Required for the Translation of Bacteriophage f2 RNA in Extracts of T4-Infected Cells	63
H. YAMASAKI AND T. MORIYAMA. Inhibitory Effect of α -Ketoglutarate: Glyoxylate Carboligase Activity on Porphyrin Synthesis in <i>Mycobacterium Phlei</i>	64
JANINA E. BRAGINSKI, JAMES S. FRANZEN, AND ALBERT E. CHUNG. Reversible Inactivation of <i>Azoto-</i> <i>bacter vinelandii</i> TPN ⁺ — Isocitrate Dehydrogenase by the Formation of an Intramolecular Disulfide Bridge	65
RUDOLF DRZENIEK AND ADELINE GAUHE. Differences in Substrate Specificity of Myxovirus Neuroamini- dases	66
K. MURAO, M. SANEYOSHI, F. HARADA, AND S. NISHIMURA. Uridin-5-Oxy Acetic Acid: A New Minor Constituent from <i>E. coli</i> Valine Transfer RNA I	67
DANIEL B. FISHER AND SEYMOUR KAUFMAN. The Effect of Enzyme Concentration, Ionic Strength, and Temperature on the Stoichiometry of the Phenylalanine Hydroxylase Reaction	68
Y. E. RAHMAN, JAN VERHAGEN, D. F. M. v. d. WIEL. Evidence of a Membrane-Bound Phospholipase A in Rat Liver Lysosomes	69
ROBERT W. BOESEL AND FREDERICK H. CARPENTER. Crosslinking During the Nitration of Bovine Insulin with Tetranitromethane	70
L. A. HADWIGER AND M. E. SCHWOCHAU. Induction of Phenylalanine Ammonia Lyase and Pisatin in Pea Pods by Poly-Lysine, Spermidine or Histone Fractions	71
ZAKARIYA SHIHABI, HECTOR F. BALEGNO, AND OTTO W. NEUHAUS. Injury-Stimulated Uptake of α -Amino- isobutyric Acid by Rat Liver	72
SHOGO IGARASHI, ANDREW H. KANG, AND JEROME GROSS. Renaturation and Ordering by Electron Microscopy of the Cyanogen Bromide Peptides from the α 2 Chain of Chick Skin Collagen	73
JENS VUUST, JOSEPH M. LANE, PETER P. FIETZEK, EDWARD J. MILLER, AND KARL A. PIEZ. The Order of the CNBr Peptides from the α 2 Chain of Collagen	74
ESTANISLAVA SLABNIK AND ROSALIA B. FRYDMAN. A Phosphorylase Involved in Starch Biosynthesis ..	75
I. HUHTANIEMI, M. IKONEN, AND R. VIHKO. Presence of Testosterone and Other Neutral Steroids in Human Fetal Testes	76
D. A. SHAFRITZ, P. M. PRICHARD, J. M. GILBERT, AND W. F. ANDERSON. Separation of Two Factors, M ₁ and M ₂ , Required for Poly U Dependent Polypeptide Synthesis by Rabbit Reticulocyte Ribosomes at Low Magnesium Ion Concentration	77
RUDOLPH SCHWEYEN AND FRITZ KAUEWITZ. Protein Synthesis by Yeast Mitochondria in Vivo. Quantitative Estimate of Mitochondrially Governed Synthesis of Mitochondrial Proteins	78
JOHN S. COLE, III AND M. I. H. ALEEM. Oxidative Phosphorylation in <i>Thiobacillus novellus</i>	79
AMIKAM COHEN AND ALEX KEYNAN. Synthesis of a Factor Stimulating Transcription in Outgrowing <i>Bacillus cereus</i> Spores	80
CAROL G. COX AND JAMES B. GILBERT. Nonidentical Times of Gene Expression in Two Strains of <i>Saccharomyces cerevisiae</i> with Mapping Differences	81
ROBERT T. TAYLOR AND M. LESLIE HANNA. Spectrophotometric Evidence for the Formation of an <i>Escherichia coli</i> B B _{12a} Methyltransferase	82
SAMSON T. JACOB, ELIZABETH M. SAJDEL, AND HAMISH N. MUNRO. Different Responses of Soluble Whole Nuclear RNA Polymerase and Soluble Nucleolar RNA Polymerase to Divalent Cations and to Inhibition by α -Amanitin	83
YUTARO MOTOKAWA, KOICHI HIRAGA, HIDEO KOCHI, AND GORO KIKUCHI. Evidence for the Presence of a Protein-Bound Intermediate in the Cleavage and the Synthesis of Glycine	84
CHIEN HO, DONALD G. DAVIS, NANCY H. MOCK, TED R. LINDSTROM, AND SAMUEL CHARACHE. Nuclear Magnetic Resonance Studies of Hemoglobin. IV. The Structure-Function Relationship of Human Adult Hemoglobins A and Chesapeake and Its Implication to the Nature of Oxygenation of Hemoglobin	85
HAROLD ZARKOWSKY, EDWARD LIPKIN, AND LUIS GLASER. The Mechanism of 6-Deoxyhexose Synthesis. IV. The Role of Pyridine Nucleotide in Substrate Release	86
J. P. KAMERLING, D. ROSENBERG, AND J. F. G. VLEGENTHART. The Determination of the Configuration of the Glycosidic Link in Oligosaccharides by P. M. R. Spectroscopy of Trimethylsilyl Derivatives	87
D. W. URRY AND A. RUITER. Conformation of Polypeptide Antibiotics. VI. Circular Dichroism of Stendomycin	88
R. H. SYMONS. ³² P-3', 5'-CYCLIC AMP: A Simple Preparative Procedure	89
R. T. LOUIS-FERDINAND AND G. C. FULLER. Suppression of Hepatic Ribonuclease During Phenobarbital Stimulation of Drug Metabolism	90

PONKA, J. NEUWIRT, M. SPERL, AND Z. BREZIK. The Ability of Exogenous Heme to Restore Globin Synthesis in Reticulocytes with Impaired Heme Formation	817
GIVOL, Y. WEINSTEIN, M. GORECKI, AND M. WILCHEK. A General Method for the Isolation of Labelled Peptides from Affinity-Labelled Proteins	825

Number 5, March 12, 1970

TON N. J. HEYN. Dextranase Activity and Auxin-Induced Cell Elongation in Coleptiles of <i>Avena</i> ..	831
C. YOOH, J. R. BENEMAN, D. I. ARNON, R. C. VALENTINE, AND STERLING A. RUSSELL. An Endogenous Electron Carrier for the Nitrogenase System of <i>Rhizobium</i> Bacteroids	838
V. VIGNAIS AND P. M. VIGNAIS. Revised Data on (³⁵ S)-Atractyloside Binding to Mitochondrial Membranes	843
CHARD L. CROSS AND JUI H. WANG. Evidence of a Phosphorylated Intermediate in Mitochondrial Oxidative Phosphorylation	848
THUR M. LESK. On the Possibility of a Stage in the Evolution of the Genetic Message in which Replication was Imprecise	855
ELTON S. FEATHER, VIJAY DESHPANDE, AND MICHAEL J. LYBYER. Anomeric Specificity During Some Isomerase Reactions	859
RICHTER. Formation of a Ternary Complex Between Yeast Aminoacyl-tRNA Binding Factor, GTP, and Aminoacyl-tRNA	864
M. BACKER, YU. N. MOLIN, AND A. S. SOROKIN. Proton Magnetic Resonance Study of the Interaction of Amino Acids and Dipeptides with sRNA	871
OLKER KASCHE. Activity Distributions in Modified α -Chymotrypsin	875
DERIC H. WHITE-STEVENS AND HENRY KAMIN. Uncoupling of Oxygen Activation from Hydroxylation in a Bacterial Salicylate Hydroxylase	882
THOMAS E. WAGNER. A Trypsin Sensitive Site for the Action of Hydrocortisone on Calf Thymus Nuclei	890
NOIT DE CROMBRUGHE, HAROLD E. VARMUS, ROBERT L. PERLMAN, AND IRA H. PASTAN. Stimulation of Lac mRNA Synthesis by Cyclic AMP in Cell Free Extracts of <i>Escherichia coli</i>	894
WARD M. SCOTT. Properties of the Trace Enzyme in Human Serum Cholinesterase Deficiency	902
T. WALKER AND U. L. RAJBHANDARY. <i>E. coli</i> Tyrosine Transfer RNA: Chemical Modification of Thiouridine to Uridine	907
ROTO AKIYOSHI AND NOBUTO YAMAMOTO. DNA-DNA Hybridization at Low Temperature Using DNA Chemically Labeled with ¹⁴ C-Dimethyl Sulfate	915
MARY C. RITTER AND MARY E. DEMPSEY. Purification and Characterization of a Naturally Occurring Activator of Cholesterol Biosynthesis from $\Delta^{5,7}$ -Cholestadienol and Other Precursors	921
A. KOCHETOV AND P. P. PHILIPPOV. Calcium: Cofactor of Transketolase from Baker's Yeast	930
YOZO MAEDA, KEITARO HIROMI, AND SHUN-ICHI OHNISHI. A Kinetic Study on Conformational Change of Deoxyhemoglobin Induced by a Group of Effectors	934
CC. YONG AND TSOO E. KING. The Interactions of Copper and a ₃ in Cytochrome Oxidase	940
ASUO AKANUMA, TAKESHI KUZUYA, MASAKI HAYASHI, TAKEHIKO IDE, AND NOBUSADA KUZUYA. Immunological Reactivity of Insulin to Sepharose Coupled with Insulin-Antibody — Its Use for the Extraction of Insulin from Serum	947
MARY C. FROEDE AND F. EDMUND HUNTER, JR. Catalytic Effect of GSSG on Reduction of Cytochrome C by GSH — Possible Model for Facilitation of Electron Transfer and Energy Conservation by Sulfonium Ion Formation	954
ELTON J. CORMIER, YASHWANT D. KARKHANIS, AND KAZUO HORI. Evidence that Renilla Luciferase is not a Calcium-Trigged Photoprotein	962
DUBOURDIEU AND J. LE GALL. Chemical Study of Two Flavodoxins Extracted from Sulfate Reducing Bacteria	965
EPHEN F. COTTRELL AND CHARLOTTE J. AVERS. Evidence of Mitochondrial Synchrony in Synchronous Cell Cultures of Yeast	973
AI SIMONS AND LEEVI KAARIANEN. Characterization of the Semliki Forest Virus Core and Envelope Protein	981

J. R. POLLACK AND J. B. NEILANDS. Enterobactin, an Iron Transport Compound from <i>Salmonella typhimurium</i>	9
ANNOUNCEMENT	9

Number 6, March 27, 1970

JAMES N. IHLE AND LEON DURE III. Hormonal Regulation of Translation Inhibition Requiring RNA Synthesis	9
E. KUN, E. B. KEARNEY, N. M. LEE, AND I. WIEDEMANN. Interaction of a Cytoplasmic Factor with Electron and Ion Transfer Coupled Functions of Mitochondria	10
M. LOSADA, A. PANEQUE, P. J. APARICIO, J.M. ^a VEGA, J. CÁRDENAS, AND J. HERRERA. Inactivation and Repression by Ammonium of the Nitrate Reducing System in <i>Chlorella</i>	10
DAVID LEE MILLER AND HERBERT WEISSBACH. Interactions Between the Elongation Factors: The Displacement of GDP from the Tu-GDP Complex by Factor Ts	10
M. ABOUD AND M. BURGER. The Effect of Catabolite Repression and of Cyclic 3';5' Adenosine Monophosphate on the Translation of the Lactose Messenger RNA in <i>Escherichia coli</i>	10
M. GNAZDOWSKI, J. L. MANDEL, JR., F. GISSINGER, C. KEDINGER, AND P. CHAMBON. Calf Thymus RNA Polymerases Exhibit Template Specificity	10
ROGER K. KIPFER AND ROBERT E. OLSON. Reversal by Vitamin K of Cycloheximide Inhibited Biosynthesis of Prothrombin in the Isolated Perfused Rat Liver	10
MATTHEW PINCUS AND ROBERT P. CARTY. The Reaction of 2'(3')-O-Bromoacetyluridine with Ribonuclease A	10
GIAMPIETRO RAMPONI AND SANTIAGO GRISOLIA. Acylation of Lysine and of Arginine-Rich Histones with Carbamyl Phosphate and 1,3 Diphosphoglycerate	10
A. A. M. GRIBNAU, J. G. G. SCHOENMAKERS, M. VAN KRAAIKAMP, AND H. BLOEMENDAL. High Purification of the RNase Inhibitor from Rat Liver by Affinity Chromatography	10
A. A. KHAN AND C. C. ANOJULU. Absciscic Acid Changes in Nucleotide Composition of Rapidly Labelled RNA Species of Pear Embryos	10
CLEMENT E. FURLONG AND JOEL H. WEINER. Purification of a Leucine-Specific Binding Protein from <i>Escherichia coli</i>	10
HANOCH SLOR. Studies on the Nonspecific Phosphodiesterase Activity of Splenic Acid Deoxyribonuclease	10
ILMO HASSINEN AND REINO H. YLIKAHRI. Absorption Spectrophotometry of Perfused Rat Liver Applied to Fructose-Induced Inhibition of Respiration	10
J. E. CHRISTNER, S. NAND, AND N. S. MHATRE. The Reversible Inhibition of β -Glucuronidase by Organic Peroxides	10
ELMON L. COE. Transient Isolation of the Hexokinase Reaction from the Glycolytic Sequence on Initiation of Glycolysis in Ascites Tumor Cells	11
STANLEY W. WATSON, MARY ANN ASBELL, AND FREDERICA W. VALOIS. Ammonia Oxidation by Cell-Free Extracts of <i>Nitrosocystis oceanus</i>	11
RONALD C. GREENE, CHING-HSIANG SU, AND CAROLINE T. HOLLOWAY. S-Adenosylmethionine Synthetase Deficient Mutants of <i>Escherichia coli</i> K-12 with Impaired Control of Methionine Biosynthesis	11
M. L. POLAN, W. J. McMURRAY, S. R. LIPSKY, AND S. LANDE. Mass Spectrometry of Cysteine-Containing Peptides	11
H. M. POOLEY, J. M. PORRES-JUAN, AND G. D. SHOCKMAN. Dissociation of an Autolytic Enzyme-Cell Wall Complex by Treatment with Unusually High Concentrations of Salt	11
GERALD LITWACK AND K. S. MOREY. Cortisol Metabolite Binder I: Identity with the Dimethylaminoazobenzene Binding Protein of Liver Cytosol	11
RICHARD C. ADELMAN. The Independence of Cell Division and Age-Dependent Modification of Enzyme Induction	11
W. SZER AND J. BRENOWITZ. Translation of MS2 RNA by Ribosomes from Different Bacterial Species	11
JAMES F. KANE AND ROY A. JENSEN. Enzyme Induction in the Tryptophan Biosynthetic Pathway in <i>Bacillus subtilis</i>	11
S SMEDS. Protein Composition of the Colloid Collected from Single Rat Thyroid Follicles	11
JON P. MILLER AND GEORG R. PHILIPPS. Purification of Transfer-RNA-Nucleotidyltransferase from <i>E. coli</i> B	11
AUTHOR INDEX	11